Arizona Department of Education

Mathematics Standards Chart for AIMS

Standards 1 through 6

Proficiency (High School) Level
Reflecting the Blueprint Revisions of 06.26.00

Mathematics Standards Chart for AIMS - Proficiency Level (High School)
Standards 1 through 6

STANDARD 1: NUMBER SENSE

STANDARD 1: NUMBER SENSE **Students develop number sense and use numbers and number relationships to acquire basic facts, to solve a wide variety of real-world problems, and to determine the reasonableness of results.** ***Students know and are able to do the Readiness, Foundations, and Essentials P.O.'s, and the following:***	
Concept/Performance Objective	**Chart Code***
1M-P1. Compare and contrast the real number system and its various subsystems with regard to their structural characteristics	**Core**
PO 1. Classify numbers as members of the sets (natural, whole, integers, rationals and irrationals)	**C**
PO 2. Compare subsets of the real number system with regard to their properties (commutative, associative, distributive, identity, inverse and closure properties)	**T**
PO 3. Compare subsets of the real numbers by determining which characteristics they have in common	U
PO 4. Identify whether a given set of numbers is finite or infinite	**T**
1M-P2. Construct, interpret and demonstrate meaning for real numbers and absolute value in problem-solving situations	**Core**
PO 1. Determine a rational estimate of an irrational number	**C**
PO 2. Define *absolute value* as the distance from the origin	**T**
PO 3. Solve real-world problems using absolute value	**C**
PO 4. Determine, among the solutions to a real-world problem, which, if any, is reasonable	**C**
PO 5. Represent *pi* as the ratio or circumference to diameter (moved and renumbered to 4.4.4).	C
PO 6. Choose the appropriate signed real number to represent a real-world value	**C**
PO 7. Use the appropriate form of a real number to express a real-world situation (e.g., choosing between a radical expression or rational approximation)	**C**
PO 8. Convert standard notation to scientific notation, including negative exponents, and vice versa	**C**

Note 1: The original 1M-P2.PO5 has been moved to geometry, 4M-P4.PO4.

Note 2: The total points for AIMS Mathematics will be distributed as follows: approximately $\frac{1}{3}$ Algebra, approximately $\frac{1}{3}$ geometry, and approximately $\frac{1}{3}$ consisting of the remaining four mathematics standards. All concepts and P.O.'s denoted as "Core" (or "C") in the Chart Code column are subject to being selected for any form of AIMS. However, no other concepts or P.O.'s will be selected. Please note that the number of points per concept and the total number of total points possible will vary slight from form to form.

STANDARD 2: DATA ANALYSIS AND PROBABILITY

STANDARD 2: DATA ANALYSIS AND PROBABILITY **Students use data collection and analysis, statistics, and probability to make valid inferences, decisions and arguments and to solve a variety of real-world problems.** ***Students know and are able to do the following:***	
Concept/Performance Objective	**Chart Code***
2M-P1. Construct and draw inferences including measures of central tendency, from charts, tables, graphs and data plots that summarize data from real-world situations	**Core**
PO 1. Organize collections of data into frequency charts, stem-and-leaf plots and scatter plots	**C**
PO 2. Construct histograms, line graphs, circle graphs and box-and-whisker plots	**C**
PO 3. Draw inferences from collections of data	**T**
PO 4. Evaluate the reasonableness of conclusions drawn from data analysis	**C**
PO 5. Use mean, median, mode, quartiles and range as a means for effective decision making in analyzing the data and the outliers	**C**
PO 6. Identify graphic misrepresentations and distortions of sets of data (e.g. omissions of parts of axis range, unequal interval sizes)	**C**
2M-P2. Use appropriate technology (e.g., graphing calculators, computer software) to display and analyze data	**Not on test**
PO 1. Use appropriate technology to display data as lists, tables, matrices and plots	**T**
PO 2. Use appropriate technology to calculate mean, median, mode, minimum and maximum	**T**
PO 3. Use appropriate technology to predict patterns in sets of data (e.g., "Does a scatter plot appear to be linear?")	**T**
2M-P3. Apply curve fitting to make predictions from data	**Core**
PO 1. Draw a line which closely fits a scatter plot	**C**
PO 2. Make a prediction from a linear pattern in plots of data	**C**
PO 3. Draw a curve which closely fits a scatter plot (PO 1 & 3 previously combined)	L
2M-P4. Explain the effects of sampling on statistical claims and recognize misuses of statistics	**Core**
PO 1. Differentiate between sampling and census	**C**
PO 2. Differentiate between a biased and an unbiased sample	**C**
PO 3. Recognize the impact of interpreting data from a biased sample	**C**
PO 4. Distinguish the effects of using statistical measures obtained from a sample vs. those obtained from a census	L
PO 5. Recognize the misinterpretations of data from different representations of those same data	L
PO 6. Determine the validity of sampling methods in studies	L

STANDARD 2, continued	
Concept/Performance Objective	**Chart Code***
2M-P5. Design and conduct a statistical experiment to study a problem and interpret and communicate the outcomes	**Not on test**
PO 1. Design a statistical experiment based on a given hypothesis	L
PO 2. Create an appropriate data-gathering instrument (e.g., biased vs. unbiased questions, multiple choice vs. open-ended)	L
PO 3. Organize collected data into an appropriate graphical representation	L
PO 4. Draw and support inferences that are based on data analysis	L
2M-P6. Use experimental or theoretical probability, as appropriate, to represent and solve problems involving uncertainty	**Not on test**
PO 1. Recognize whether experimental or theoretical methods were used to calculate a particular probability	L
PO 2. Use experimental observations to estimate probabilities of entire populations	L
PO 3. Distinguish between independent and dependent events	L
PO 4. Solve probability problems involving *and* and *or* statements, with and without replacement	L
2M-P7. Use simulations to estimate probabilities	**Not on test**
PO 1. Design appropriate simulations to estimate probabilities of real-world situations (e.g., disk toss, cube toss, technological simulations)	L
PO 2. Use simulations to estimate probabilities of real-world situations	L
2M-P8. Solve real-world problems by using combinations and permutations	**Core**
PO 1. Use a tree diagram or a chart of possible outcomes to count probable outcomes of an event	**C**
PO 2. Determine when to use combinations in counting objects	L
PO 3. Determine when to use permutations in counting objects	L
PO 4. Use combinations and permutations to solve real-world problems not requiring the use of formulas	L
2M-P9. Describe, in general terms, the normal curve and use its properties to answer questions about sets of data that are assumed to be normally distributed	**Not on test**
PO 1. Determine if data gathered from a real-world situation fits a normal curve	L
PO 2. Describe the central tendency characteristics of the normal curve	L
PO 3. Make simple predictions from data represented on a given normal curve	L
2M-P10. Explain the concept of a random variable	**Not on test**
PO 1. Distinguish situations where a random variable is needed or used	L
PO 2. Use a random number table or technology to generate random numbers in modeling real-life situations (e.g., select randomly who belongs in what group)	U

STANDARD 2, continued	
Concept/Performance Objective	**Chart Code***
2M-P11. Apply measures of central tendency, variability and correlation	**Core**
PO 1. Apply the concepts of mean, median, mode and range to draw conclusions about data	C
PO 2. Draw conclusions about the "spread" of data given the variance and standard deviation (e.g., compare sets of data with the same central tendency, but with different variance)	L
PO 3. Determine, from a given plot of data, whether it has, positive or negative correlation	C

STANDARD 3: PATTERNS, ALGEBRA AND FUNCTIONS

STANDARD 3: PATTERNS, ALGEBRA AND FUNCTIONS **Students use algebraic methods to explore, model and describe patterns, relationships and functions involving numbers, shapes, data and graphs within a variety of real-world problem-solving situations.** ***Students know and are able to do the following:***	
Concept/Performance Objective	**Chart Code***
3M-P1. Model real-world phenomena (e.g., compound interest or the flight of a ball) using functions and relations (e.g., linear, quadratic, sine and cosine, and exponential)	**Core**
PO 1. Identify the independent and dependent variables from a real-world situation	L
PO 2. Describe a real-world situation that is depicted by a given graph.	C
PO 3. Sketch a graph that models a given real-world situation	T
3M-P2. Represent and analyze relationships using written and verbal explanations, tables, equations, graphs and matrices and describe the connections among those representations	**Core**
PO 1. Express the relationship between two variables using a table, equation, graph and matrix	T
PO 2. Describe the relationship suggested by two or more graphs of related real-world situations	U
PO 3. Determine whether a relation is a function, given the graphical representation	C
3M-P3. Analyze the effects of parameter changes on functions (e.g., linear, quadratic and trigonometric) using calculators and/or computers	**Not on test**
PO 1. Use technology to determine changes in the shape and behavior of polynomial functions (of degree 2 or less) when constants and coefficients are varied	L

STANDARD 3, continued	
Concept/Performance Objective	**Chart Code***
3M-P4. Interpret Algebraic Equations And Inequalities Geometrically And Describe Geometric Relationships Algebraically	**Core**
PO 1. Graph a linear equation in two variables	**C**
PO 2. Graph a linear inequality in two variables	**C**
PO 3. Determine slope and intercepts of a linear equation	**C**
PO 4. Write an equation of the line that passes through two given points	**C**
PO 5. Determine from two linear equations whether the lines are parallel, are perpendicular or coincide	**C**
3M-P5. Apply trigonometry to real-life problem situations (e.g., investigate how to find the distance across a river using similar triangles and trigonometric ratios; compare the sine and cosine curves to the curves of sound waves)	**Not on test**
PO 1. Use the definitions of trigonometric functions to find the sine, cosine and tangent of the acute angles of a right triangle	**T**
PO 2. Solve simple right-triangle trigonometric equations involving sine, cosine and tangent	L
PO 3. Use an appropriate right-triangle trigonometric model to solve a real-life problem	L
3M-P6. Perform mathematical operations on expressions and matrices, and solve equations and inequalities	**Core**
PO 1. Simplify numerical expressions using the order of operations, including exponents	**C**
PO 2. Evaluate algebraic expressions using substitution	**C**
PO 3. Simplify algebraic expressions using distributive property	**C**
PO 4. Simplify square roots and cube roots with monomial radicands that are perfect squares or perfect cubes	**C**
PO 5. Calculate powers and roots of real numbers, both rational and irrational, using technology	**T**
PO 6. Evaluate numerical and algebraic absolute value expressions	**C**
PO 7. Multiply and divide monomial expressions with integer exponents	**C**
PO 8. Add, subtract and perform scalar multiplication with matrices	L
PO 9. Solve linear equations and inequalities in one variable	**C**
PO 10. Solve formulas for specified variables	**C**
PO 11. Solve quadratic equations (integral roots only)	**C**
PO 12. Solve radical equations involving one radical (restrict to square roots)	L
PO 13. Solve proportions which generate linear equations	**C**
PO 14. Solve absolute value equations containing a single absolute value expression	**T**
PO 15. Solve systems of linear equations in two variables (integral coefficients and solutions)	**C**

STANDARD 3, continued	
Concept/Performance Objective	**Chart Code***
3M-P7. Translate among tabular, symbolic and graphical representations of functions	**Core**
PO 1. Create a linear equation from a table of values	**C**
PO 2. Create a graph from a table of values	**C**
PO 3. Determine the solution to a system of equations in two variables, from a given graph	**C**
PO 4. Determine the solution to a system of inequalities in two variables, from a given graph (e.g., "Which of the shaded regions represents the solution to the system?")	**T**
3M-P8. Use the power of mathematical abstraction and algebraic symbolism to represent various situations	**Core**
PO 1. Translate verbal expressions and sentences to mathematical expressions and sentences	**C**
PO 2. Generate an algebraic sentence to model real-life situations, given a data set (limited to linear relationships)	**C**
3M-P9. Determine maximum and minimum points of a graph and interpret results in problem situations	**Core**
PO 1. Identify the maximum or minimum point from the graph of a quadratic function	U
PO 2. Determine domain and range of a relation, given the graph or a set of points	**C**
PO 3. Determine the solution to a real-world maximum/minimum problem, given the graphical representation (e.g., given the graph of the path of a ball, determine its maximum height, when it will reach its maximum height, when it will reach ground level)	U
3M-P10. Investigate the limiting process by examining infinite sequences and series and areas under curves	**Not on test**
PO 1. Compare the estimates of the area under a curve over a bounded interval, using progressively smaller rectangles (not using calculus)	L
PO 2. Estimate the limit of a given infinite sequence (e.g., given the sequence $1/n$, as n gets larger) (not using calculus)	L

STANDARD 4: GEOMETRY

STANDARD 4: GEOMETRY

Students use geometric methods, properties and relationships as a means to recognize, draw, describe, connect, and analyze shapes and representations in the physical world.

Students know and are able to do the following:

Concept/Performance Objective	Chart Code*
4M-P1. Interpret and draw three-dimensional objects	**Core**
PO 1. Identify sketches of prisms, pyramids, cones, cylinders and spheres NOTE: Sketching these figures should be assessed at the district level	C
PO 2. Classify prisms, pyramids, cones, cylinders and spheres by base shape and lateral surface shape	C
PO 3. Recognize the three-dimensional figure represented by a two-dimensional drawing (e.g., "What figures are represented by given nets, sketches, photographs?")	C
4M-P2. Represent problem situations with geometric models and apply properties of figures	**Core**
PO 1. Calculate surface areas and volumes of three-dimensional geometric figures, given the required formulas	C
PO 2. Solve applied problems using angle and side length relationships	C
PO 3. Solve applied problems using the Pythagorean theorem (e.g., determine whether a wall is square)	C
PO 4. Solve applied problems using congruence and similarity relationships of triangles (e.g., estimate the height of a building, using shadows)	C
PO 5. Make a model of a three-dimensional figure from a two-dimensional drawing and make a two-dimensional representation of a three-dimensional object (models and representations include scale drawings, perspective drawings, blueprints or computer simulations)	T
PO 6. Determine the distance and midpoint between points within a coordinate system representative of a practical application	C
PO 7. Find the area of a geometric figure composed of a combination of two or more geometric figures, given an appropriate real-world situation and the formulas	C
PO 8. Solve problems with complementary, supplementary and congruent angles	C

STANDARD 4, continued	
Concept/Performance Objective	**Chart Code***
4M-P3. Deduce properties of figures using transformations in coordinate systems, identifying congruency and similarity	**Core**
PO 1. Determine whether a planar figure is symmetric with respect to a line.	**C**
PO 2. Give the new coordinates of a transformed geometric planar figure.	**T**
PO 3. Determine the effects of a transformation on linear and area measurements of the original planar figure	**C**
PO 4. Sketch the planar figure that is the result of a given transformation	**C**
4M-P4. Deduce properties of, and relationships between, figures from given assumptions	**Core**
PO 1. Find similarities and differences among geometric shapes and designs using a given attribute (e.g., height, area, perimeter, diagonals, and angle measurements).	**C**
PO 2. Identify arcs, chords, tangents and secants of a circle.	**C**
PO 3. State valid conclusions using given geometric definitions, postulates and theorems	**C**
PO 4. Represent *pi* as the ratio of circumference to diameter (moved from 1.2.5)	**C**
4M-P5. Translate between synthetic and coordinate representations (e.g., a straight line is represented by the algebraic equation Ax + By = C)	**Core**
PO 1. Determine the relative placement of two lines on a coordinate plane by examining the algebraic equations representing them	**C**
PO 2. Verify characteristics of a given geometric figure using coordinate formulas such as distance, mid-point, and slope to confirm parallelism, perpendicularity, and congruency.	**T**
4M-P6. Recognize and analyze Euclidean transformations (e.g., reflections, rotations, dilations and translations)	**Core**
PO 1. Classify transformations based on whether they produce congruent or similar non-congruent figures	**C**
PO 2. Determine whether a given pair of figures on a coordinate plane represents a translation, reflection, rotation and/or dilation	**C**
PO 3. Apply transformational principles to practical situations (e.g., enlarge a photograph).	**T**

STANDARD 5: MEASUREMENT AND DISCRETE MATHEMATICS

STANDARD 5: MEASUREMENT AND DISCRETE MATHEMATICS **Students make and use direct and indirect measurement, metric and U.S. customary, to describe and compare the real world and to prepare for the study of discrete functions, fractals and chaos which have evolved out of the age of technology.** ***Students know and are able to do the following:***	
Concept/Performance Objective	**Chart Code***
5M-P1. Represent problem situations using discrete structures such as finite graphs, matrices, sequences and recurrence relations	**Not on test**
PO 1. Use matrices and finite graphs to display data	L
PO 2. Find a specified n^{th} term of a simple arithmetic or geometric sequence, where the common difference or common ratio is an integer and $n > 100$	L
PO 3. Use simple or basic recursion formulas to solve real-life problems (e.g., compound interest)	L
5M-P2. Represent and analyze finite graphs using matrices	**Not on test**
PO 1. Interpret data using matrices and finite graphs (e.g., networks, street diagrams, tournament schedules, production schedules)	L
PO 2. Determine when a finite graph gives an accurate picture of a data set	L
PO 3. Translate a finite graph into a matrix and vice versa	L
5M-P3. Develop and analyze algorithms	**Core**
PO 1. Write an algorithm that explains a particular mathematical process (e.g., tell a younger child how to find the average of two numbers)	**T**
PO 2. Determine the purpose of a given algorithm (simple, basic, math algorithm)	**C**
PO 3. Determine whether given algorithms are equivalent (simple, basic, math algorithm) Which of the following is equivalent to….	**C**
5M-P4. Solve enumeration and finite probability problems	**Core**
PO 1. Find the outcome set of a situation	**C**
PO 2. Find the probability that a specific event will happen	**C**
PO 3. Determine theoretical geometrical probabilities, given necessary formulas (e.g., "Given a circular target on a square base, what is the probability of hitting the circle with a dart, providing the dart goes inside the square?")	**T**
PO 4. Determine the number of possible outcomes in a real-world situation using the counting principle and tree diagrams	**C**
PO 5. Use critical path methods in problem solving (e.g., students can represent connections between cities, or some other objects, with graphs and illustrate the number of ways of moving from one vertex to another under various rules for movement [touch each vertex only once, touch each edge only once, begin and end at the same vertex, . . .])	U

STANDARD 6: MATHEMATICAL STRUCTURE/LOGIC

STANDARD 6: MATHEMATICAL STRUCTURE/LOGIC **Students use both inductive and deductive reasoning as they make conjectures and test the validity of arguments.** ***Students know and are able to do the following:***	
Concept/Performance Objective	**Chart Code***
6M-P1. Use inductive and deductive logic to construct simple valid arguments	**Core**
PO 1. Construct a simple informal deductive proof (e.g., write a proof of the statement: "Given an airline schedule with cities and flight times, you can fly from Bombay to Mexico City.")	**T**
PO 2. Produce a valid conjecture using inductive reasoning by generalizing from a pattern of observations (e.g., if $10^1 = 10$, $10^2 = 100$, $10^3 = 1000$, make a conjecture)	**C**
6M-P2. Determine the validity of arguments	**Core**
PO 1. Determine if the converse of a given statement is true or false	**T**
PO 2. Draw a simple valid conclusion from a given *if . . . then* statement and a minor premise	**C**
PO 3. Distinguish valid arguments from invalid arguments	**C**
PO 4. List related *if . . . then* statements in logical order	**C**
PO 5. Use Venn diagrams to determine the validity of an argument	U
PO 6. Analyze assertions about everyday life by using principles of logic (e.g., examine the fallacies of advertising)	**T**
PO 7. Recognize the difference between a statement verified by mathematical proof (i.e., a theorem) and one verified by empirical data (e.g., women score higher than men on vocabulary tests)	L
6M-P3. Formulate counterexamples and use indirect proof	**Core**
PO 1. Construct a counterexample to show that a given invalid conjecture is false (e.g., Nina makes a conjecture that $x^3 > x^2$ for all values of x. Find a counterexample.)	**C**
6M-P4. Make and test conjectures	**Not on test**
PO 1. Write an appropriate conjecture given a certain set of circumstances	L
PO 2. Test a conjecture by constructing a logical argument or a counterexample	L
6M-P5. Understand the logic of algebraic procedures	**Core**
PO 1. Determine whether a given algebraic expression and a possible simplified form are equivalent (e.g., show that $(x + y)^2 = x^2 + y^2$ is invalid)	**C**
PO 2. Determine whether a given procedure for solving an equation is valid	**C**

TOTAL NUMBER OF AIMS PROFICIENCY LEVEL MATHEMATICS POINTS	**59 - 62**

MEMO

Arizona Department of Education

To: All Secondary School Principals, District Superintendents, Test Coordinators, Curriculum Coordinators, School Counselors, Mathematics Teachers and Parents
From: Billie J. Orr, Ed.D., Associate Superintendent, Arizona Department of Education
Subject: Revision of the Mathematics Proficiency Level Standards Blueprint, Effective 6.26.00
Date: June 26, 2000

The recommendations of the Math Task Force to revise the current AIMS mathematics blueprint were presented to the state Board of Education for approval at the state Board meeting June 26, 2000. The Board unanimously passed a resolution to accept the recommendations of the Mathematics Task Force resulting from their meeting of June 12th-14th.

At the state Board Study Session held on May 10, 2000, the Board of Education endorsed the plan to assemble a Math Task Force to study the Mathematics Proficiency Level Standards. The purpose of this meeting was to evaluate these Standards with regard to the Board's amendment, adopted April 24th, 2000, and to make recommendations regarding the Standards, the two-credit AIMS-level mathematics requirement for graduation, and the repercussions toward AIMS. This amendment reads as follows:

> "Effective with the graduating class of 2004, the two required math credits shall be taken consecutively beginning with the ninth grade and course content shall reflect Academic Standards preparation for proficiency at the high school level."

The Math Task Force did meet June 12th through 14th, 2000, and we had an excellent group of math teachers and university professors from around the state as well as participants from industry. "Opportunity to learn" was the key issue for the Math Task Force. That is, previous legal decisions throughout the nation required students to have had the opportunity to learn the material for which they will be held accountable on the AIMS test *prior to* taking the test for the first time. Furthermore, the department continued wanting to give students five opportunities to "Meet the Standard" on AIMS, requiring that they make their first attempt in the spring of their sophomore year. While the Task Force recognizes that the Standards document represents the ideal of what all students should know and be able to do, it was recognized that there may be limitations to what can be accomplished within the clearly defined two-credit mathematics instruction to be required.

It should be noted here that the Mathematics Proficiency Standards document itself DID NOT CHANGE. The purpose of the Mathematics Task Force was to clearly *identify* the Concepts and Performance Objectives for which all students will be held accountable on AIMS in order to receive a diploma, given the recent decision of the Board. As a result of the acceptance of the Math Task Force recommendations, the following Standards Chart, reflecting the changes made to the AIMS blueprint (adopted 6/26/00) was developed to assist school personnel in meeting the mathematics requirements of the 4/24/00 amendment. This document identifies the specific concepts, which we are calling "Core" concepts, that MUST BE taught in the first two years of high school mathematics as required by the state Board of Education ruling of 4/24/00. These Core concepts represent those mathematics concepts the Task Force believes are critical to be taught to ALL students. Within the Core concepts are performance objectives that will be on AIMS (those denoted "C" in the standards chart) and those that must be taught but won't be on AIMS (those denoted "T" in the standards chart). These latter performance objectives were identified as critical to be taught in the CORE Curriculum, but they are to be assessed at the district level, due primarily to the

technological aspect associated with the performance objective. Seven performance objectives were evaluated and found to be inappropriate for use at the high school level, mostly because these items are taught at earlier grades. These are denoted with a "U." Finally, other concepts and performance objectives, denoted with an "L," were identified as appropriate to be taught in a third (or later) year of mathematics. While we would desire all students to be exposed to this material, it tends to fall outside the scope and sequence of the requisite two-credit requirement of the State Board.

Key:

Core. ***Concepts*** labeled "core" are those concepts the Mathematics Task Force believes must be taught to all students within the required two-credit mathematics curriculum. However, only those performance objectives (PO's) denoted with a "C" or a "T" are required to be taught within this core concept. Twenty-eight of the 38 total concepts are considered "core."

C. ***Performance objectives*** **labeled** "C" are those PO's the Mathematics Task Force identified as critical and testable for AIMS purposes. That is, PO's denoted "C" are unequivocally to be taught to all students in the two-credit mathematics curriculum, as described in the Board's amendment of April 24th, 2000, and will be assessed on AIMS. There are 76 "C" PO's.

T. ***Performance objectives*** labeled "T" are those PO's the Mathematics Task Force identified as core, but are not readily or appropriately testable at the state level. These PO's are unequivocally to be taught all students in the two-credit Core curriculum, but they are to be assessed at the district level. There are 22 "T" PO's.

L. ***Concepts and Performance objectives*** labeled "L" are those concepts and PO's the Mathematics Task Force identified as important for all students to know and be able to do. However, although these concepts and PO's may be introduced within the two-credit curriculum, mastery tends to occur beyond the scope and sequence of a typical secondary two-credit mathematics curriculum. Therefore, they will not be required *by the state* to be taught to all students in the two-credit curriculum, nor will they be assessed by AIMS. However, districts may choose to include some or all of these concepts and PO's in their required district mathematics curriculum. There are 10 "L" concepts and 39 "L" PO's.

U. ***Performance objectives*** labeled "U" are those performance objectives that are not essential to a secondary curriculum. There were 7 PO's labeled "U."

The Mathematics Task Force strongly believes that the Mathematics Proficiency Standards document as a whole is valid to be taught to all students. We would hope that more and more students will strive to take more mathematics courses beyond the two-credit core requirement for which the remaining "L" concepts and performance objectives will serve as a foundation.

Please note that there is nothing in these recommendations that demand that you teach these core concepts only in the two-credit mathematics program. For those schools and districts that have managed to develop a curriculum that includes most if not all the current concepts and performance objectives, or that require three credits of mathematics, we are thrilled. Certainly your students will have an advantage over those who don't. However, the purpose of this Task Force was to identify those concepts and performance objectives that the they, as professionals in their fields, believe are important for ALL students to know and be able to do, AND are within the scope and sequence of a typical two-credit required course of study in mathematics. The document included with this memo is the product of this process.